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May 19, 2008

10-Sta-99-R18.7/R19.9
10-2A7704

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in STANISLAUS COUNTY IN CERES FROM 0.5 KM SOUTH OF WHITMORE AVENUE OVERCROSSING TO 0.7 KM NORTH OF WHITMORE AVENUE OVERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on June 4, 2008.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheets 2, 5, 17, 18, 19, 20, 21, 22, 23, 24, 29, 30, 31, 33, 38, 39, 40, 46, 47, 48, 49, 56, 60, 61, 84, 89, 90, 91, 92, 93, 94, 96, 97, 98, 101, 110, 122, 150, 214, 217, 218, 219, 220, 221, 222, 224, 227, 228, 229, 230, 231, 234, 243, 248, 249, 251, 254, 255, 256 and 260 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 41A, 91A, 91B, 91C, 91D, 91E, 99A, 99B, 99C, 99D, 99E, 99F, 99G, 99H, 99I, 99J, 99K, 99L, 155A and 237A are added. Half-sized copies of the added sheets are attached for addition to the project plans.

Project Plan Sheets 15 and 199 are deleted.

In the Notice to Contractors and Special Provisions, in the "STANDARD PLANS LIST," the following Standard Plans are deleted: RSP B6-21 and B7-11.

In the Notice to Contractors and Special Provisions, in the "STANDARD PLANS LIST," the following Standard Plan is added: B14-5.

In the Special Provisions, Section 10-1.17, "OBSTRUCTIONS," the fourth, fifth, and sixth paragraphs are revised as follows:

"It is anticipated that the following utility facilities will be relocated prior to the dates shown:

10-Sta-99-R18.7/R19.9
10-2A7704

Utility	Location	Date
PG&E (Gas, 415 kPa)	RR-1 Sta 40+50 to W-1 Sta 40+80	6/30/2008
PG&E (Gas, 1790 kPa)	W-1 Sta 102+00 to W-1 Sta 106+40	6/30/2008
Turlock Irrigation District (Underground Electrical)	H-1 Sta 80+80 to H-1 Sta 81+28 C-2 Sta 71+70 to 72+00	6/30/2008
Turlock Irrigation District (Overhead Electrical)	W-1 Sta 100+20 to W-1 Sta 108+00 C-1 Sta 61+10 to C-2 Sta 72+80 R-2 Sta 20+20 to H-1 Sta 84+88	6/30/2008
Charter Communications (Cable TV)	W-1 Sta 100+20 to W-1 Sta 108+00 C-1 Sta 61+10 to C-2 Sta 72+80 R-2 Sta 20+20 to H-1 Sta 84+88	6/30/2008
AT&T (Telephone)	W-1 Sta 100+20 to W-1 Sta 108+00 C-1 Sta 61+10 to C-2 Sta 72+80 R-2 Sta 20+20 to H-1 Sta 84+88	6/30/2008

The following utility facilities will be relocated during the progress of the contract. The Contractor shall notify the Engineer, in writing, prior to doing work in the vicinity of the facility. The utility facility will be relocated within the listed working days, as defined in Section 8-1.06, "Time of Completion," of the Standard Specifications, after the notification is received by the Engineer:

Utility	Location	Working Days
PG&E (Gas, 415 kPa)	C-1 Sta 61+87 to H-1 Sta 84+33	30

Installation of the following utility facilities will require coordination with the Contractor's operations. The Contractor shall make the necessary arrangements with the utility company, through the Engineer, and shall submit a schedule of work, verified by a representative of the utility company, to the Engineer. The schedule of work shall provide not less than the following number of working days, as defined in Section 8-1.06, "Time of Completion," of the Standard Specifications for the utility company to complete their work:

Utility (address)	Location	Working Days
PG&E (Gas, 415 kPa)	C-1 Sta 61+87 to H-1 Sta 84+33	30

In the Special Provisions, Section 10-1.32, "EXISTING HIGHWAY FACILITIES," subsections, "ABANDON PIPELINE," "ABANDON WATER WELL," and "REMOVE CONCRETE," are added before subsection "REMOVE METAL BEAM GUARD RAILING," as attached.

In the Special Provisions, Section 10-1.34, "EARTHWORK," the eighth, ninth, tenth, eleventh and twelfth paragraphs are deleted.

In the Special Provisions, Section 10-1.44, "CONCRETE STRUCTURES," subsection "GENERAL," the following paragraph is added after the third paragraph:

"Materials for access opening covers in soffits of new cast-in-place concrete box girder bridges shall conform to the provisions for materials in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications."

In the Special Provisions, Section 10-1.44, "CONCRETE STRUCTURES," subsection "MEASUREMENT AND PAYMENT," the following paragraph is added after the third paragraph:

10-Sta-99-R18.7/R19.9
10-2A7704

"Full compensation for furnishing and installing access opening covers in soffits of new cast-in-place box girder bridges shall be considered as included in the contract price paid per cubic meter for structural concrete, bridge and no separate payment will be made therefor."

In the Special Provisions, Section 10-4, "CITY OF CERES SEWERS AND WATER," is added as attached.

In the Special Provisions, Section 13-1.02, "RAILROAD REQUIREMENTS," the first paragraph is revised as follows:

"The Contractor shall provide to Mr. James Smith, Manager, Industry and Public Projects, 10031 Foothills Blvd., Roseville, CA 95747, Telephone: (916) 789-5152 and the Engineer, in writing, the advance notice requirements set forth in Section 1 of Exhibit A of the Right of Entry Agreement before performing any work on, or adjacent to the property or tracks of the Railroad."

In the Proposal and Contract, the Engineer's Estimate Items 20, 22, 57, and 58 are revised, Items 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164 and 165 are added and Items 94, 111 and 148 are deleted as attached.

To Proposal and Contract book holders:

Replace pages 3, 4, 5, 7, 8, and 10 of the Engineer's Estimate in the Proposal with the attached revised pages 3, 4, 5, 7, 8, 10 and 10A of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by GSO overnight mail to all book holders to ensure that each receives it. A copy of this addendum is available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Division of Engineering Services - Office Engineer

Attachments

ABANDON PIPE LINE

Existing utility pipelines, where shown on the plans to be abandoned, shall be abandoned in place or, at the option of the Contractor, the pipelines shall be removed and disposed of. Resulting openings into existing structures that are to remain in place shall be plugged with concrete conforming to the provisions in Section 90-10 "Minor Concrete," of the Standard Specifications. The concrete shall contain not less than 300 kg of cementitious material per cubic meter.

Abandoning pipelines in place shall conform to the following:

1. Pipelines that intersect the side slopes shall be removed to a depth of not less than one meter measured normal to the plane of the finished side slope, before being abandoned.
2. Pipelines 300 mm in diameter and larger, shall, at the Contractor's option, be backfilled with either sand, controlled low strength material or slurry cement backfill conforming to the provisions in Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications by any method acceptable to the Engineer that completely fills the pipe. Sand backfill material shall be clean, free draining, and free from roots and other deleterious substances.
3. The ends of pipelines shall be securely closed by a 150 mm thick tight fitting plug or wall of commercial quality concrete.

Pipelines shall not be abandoned until their use is no longer required. The Contractor shall notify the Engineer in advance of any intended culvert or pipeline abandonment.

If the Contractor elects to remove and dispose of a pipeline which is specified to be abandoned, as provided herein, backfill specified for the pipe will be measured and paid for in the same manner as if the pipeline has been abandoned in place.

Backfill will be measured by the cubic meter determined from the dimensions of the pipelines to be abandoned.

The contract price paid per cubic meter for sand backfill shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in backfilling pipelines with sand, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Controlled low strength material and slurry cement backfill, if used at the Contractor's option, will be measured and paid for by the cubic meter as sand backfill.

Full compensation for concrete plugs, pipe removal, structure excavation, and backfill shall be considered as included in the contract price paid per meter for abandon pipeline and no additional compensation will be allowed therefor.

ABANDON WATER WELL

Existing water wells where shown on the plans to be abandoned, shall be abandoned as specified in these special provisions.

Wells shall be abandoned after completion of clearing and grubbing in the area of the well involved, but before starting earthwork operations, except as otherwise specified in these special provisions.

The Contractor shall submit a "Notice of Intent" to the Department of Water Resources before starting work and also submit the "Water Well Drillers Reports" to the Department of Water Resources within 30 days after completion of the work in conformance with the provisions of the California Water Code, Sections 13750 through 13755. A copy of the above reports shall be submitted to the Engineer concurrently with submittal to the Department of Water Resources.

If the Engineer orders preliminary work, such as removing obstructions or materials that would interfere with filling or sealing the well or removing casing or lining below the grading plane, the preliminary work will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

After completion of preliminary work, material permitted to enter the well that will obstruct or interfere with filling and sealing of the well involved shall be removed by the Contractor at the Contractor's expense.

Filler materials shall be clay, silt, sand, gravel, crushed stone, native soils or mixtures thereof. Material containing organic matter shall not be used.

Filler materials shall be placed in such a manner that will assure no jamming or bridging of the material.

Sealing materials shall be neat cement, cement grout, concrete, bentonite clays, silt and clays, well proportioned mixes of silts, sands, and clays (or cement) or native soils and natural material having a coefficient of permeability of less than 30 meters per year. Used drilling muds shall not be used.

Neat cement shall be composed of 50 kg of cement per 22 to 30 liters of clean water. Cement grout shall be composed of not more than 2 parts of sand to one part of cement with 22 to 30 liters of clean water per 50 kg of cement. Concrete shall be minor concrete conforming to the provisions in Section 90-10, "Minor Concrete," of the Standard Specifications. The concrete shall contain not less than 350 kg of cementitious material per cubic meter.

Concrete shall be placed in one continuous operation by methods that prevent free fall, dilution, or separation of aggregates and cement.

At the time of placement, the volume of material placed in the well shall be verified to be at least equal to the volume of the empty hole.

Abandon water well will be measured as units determined from actual count of abandon water well.

The contract unit price paid for abandon water wells shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in abandon water wells, complete in place, as shown on the plans, as specified in the Standard Specifications, and these special provisions, and as directed by the Engineer. Full compensation for compiling and furnishing reports shall be considered as included in the contract unit price paid for abandon water well and no additional compensation will be allowed therefor.

REMOVE CONCRETE

Concrete, where shown on the plans to be removed, shall be removed and disposed of.

Attention is directed to Section 16, "Clearing and Grubbing," and Section 19-1.04, "Removal and Disposal of Buried Man-Made Objects," of the Standard Specifications and these special provisions.

Removed concrete shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

SECTION 10-4. CITY OF CERES SEWERS AND WATER

10-4.01 EXISTING CITY FACILITIES

The work performed in connection with various existing city facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

Except as otherwise provided for damaged materials in Section 15-2.04, "Salvage," of the Standard Specifications, the materials to be salvaged shall remain the property of the City of Ceres, and shall be cleaned, packaged, bundled, tagged, and hauled to the Bertolotti Transfer Station at 231 Flamingo Drive, Ceres, CA 95307, or the K & D Recycling Center, at 4107 Morgan Road, Ceres, CA 95307 and stockpiled.

The Contractor shall notify the Engineer and the Public Work Director, City of Ceres, telephone (209) 538-5748 a minimum of 48 hours prior to hauling salvaged material to the Recycle Center.

ABANDON SEWER MANHOLE

Existing sewer manholes, where shown on the plans to be abandoned, shall be abandoned.

Frames and covers shall be removed and reused in the work as shown on the plans.

Full compensation for removing and reusing sewer manhole frames and covers shall be considered as included in the contract price paid for the item of work requiring reuse of the sewer manhole frame and cover.

ABANDON SEWER PIPE LINE

Existing sewer pipelines, where shown on the plans to be abandoned, shall be abandoned in place or, at the option of the Contractor, sewer pipelines shall be removed and disposed of. Resulting openings into existing structures that are to remain in place shall be plugged with concrete conforming to the provisions in Section 90-10 "Minor Concrete," of the Standard Specifications. The concrete shall contain not less than 300 kg of cementitious material per cubic meter.

Abandoning sewer pipelines in place shall conform to the following:

1. Sewer pipelines that intersect the side slopes shall be removed to a depth of not less than one meter measured normal to the plane of the finished side slope, before being abandoned.
2. Sewer pipelines 300 mm in diameter and larger, shall, at the Contractor's option, be backfilled with either sand, controlled low strength material or slurry cement backfill conforming to the provisions in Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications by any method acceptable to the Engineer that completely fills the pipe. Sand backfill material shall be clean, free draining, and free from roots and other deleterious substances.
3. The ends of sewer pipelines shall be securely closed by a 150 mm thick tight fitting plug or wall of commercial quality concrete.

Sewer pipelines shall not be abandoned until their use is no longer required. The Contractor shall notify the Engineer in advance of any intended sewer pipeline abandonment.

If the Contractor elects to remove and dispose of sewer pipeline which is specified to be abandoned, as provided herein, backfill specified for the pipe will be measured and paid for in the same manner as if the sewer pipeline has been abandoned in place.

Backfill will be measured by the cubic meter determined from the dimensions of the culverts and pipelines to be abandoned.

The contract price paid per cubic meter for sand backfill shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in backfilling culverts and pipelines with sand, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Controlled low strength material and slurry cement backfill, if used at the Contractor's option, will be measured and paid for by the cubic meter as sand backfill.

Full compensation for concrete plugs, pipe removal, structure excavation, and backfill (including sand, controlled low strength material or slurry cement backfill) shall be considered as included in the contract price paid per meter for abandon sewer pipeline and no additional compensation will be allowed therefor.

10-4.02 BACKFLOW PREVENTER ASSEMBLIES

Backflow preventers shall conform to the provisions in Section 20-2.25, "Backflow Preventers," of the Standard Specifications and these special provisions.

Backflow preventers shall have current approval from the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC Foundation).

Before backflow preventer assembly installation, the Contractor shall provide the Engineer with the portion of the USC Foundation "List of Approved Backflow Prevention Assemblies" showing type of assembly, manufacturer's name, model number, edition of the manual under which the assembly was approved, approval date and the last renewal date.

The "List of Approved Backflow Prevention Assemblies" is available to Foundation Members. Membership information to join the USC Foundation is available at:

http://www.usc.edu/dept/fccchr/membership.html

Questions concerning the USC Foundation "List of Approved Backflow Prevention Assemblies" can be answered by calling the Foundation at toll free (866) 545-6340.

Pressure loss through the backflow preventers shall not exceed the following:

BACKFLOW PREVENTER SIZE (millimeters)	FLOW RATE (Liters per minute)	PRESSURE LOSS (kPa)
200	2000	100

Backflow preventer assemblies shall be painted with a minimum of 2 applications of a commercial quality enamel paint. The color of the paint shall be light brown.

Full compensation for backflow preventer assemblies shall be considered as included in the contract price paid per meter for water main and no separate payment will be made therefor.

10-4.03 FIRE HYDRANT

A City standard fire hydrant assembly shall be installed at the locations shown on the plans in accordance with these special provisions.

MATERIALS

Fire hydrants shall be "Rich Ranger" or "Jones" series of the type as shown on plans or approved equal, shall conform to AWWA Standard C503 for wet barrel fire hydrants and these Standards. The maximum spacing measured within the right-of-way shall be 90 meters. Self adhesive blue reflective fire hydrant markers shall be provided at a ratio of one reflector per hydrant, unless the fire hydrant faces two streets then two reflectors shall be required. Minimum standards for blue reflective fire hydrant markers shall be those standards set forth by the Amerace Corporation, for their model 88SSAB or approved equal.

CONSTRUCTION

The fire hydrant assembly shall include the tee fitting, 150 mm shut-off gate valve, the run of 150 mm pipe, and terminate with a bury and hydrant assembly installed at the location shown on the plans. A thrust block shall be installed at the back of the hydrant and all fittings for the hydrant assembly.

Valves installed for the fire hydrant run shall be flanged to the main line tee fitting. Flanges shall be dimensioned, faced and drilled to the 57 kilogram "American Standard". Valve box assemblies shall be adjusted to finish grade upon completion of the paving or trench resurfacing operations.

RELOCATE FIRE HYDRANT

Existing fire hydrant and assembly shall be removed and relocated at new location as shown on the plans.

Existing water services shall be disconnected at the flanged connection and extended with a lateral matching the existing water service size. A new concrete thrust block shall be installed at the new location.

All operating valves shall be located below grade and protected by "break-off" features so that no water flows if hydrant is knocked off.

Hydrant main valve seat shall be a minimum of 133 mm and shall be threaded into a bronze to bronze subseat. Hydrant valve shall be molded non-swelling rubber.

Contractor shall notify the Engineer 7 days in advance of the shutdown and again at 24 hours. Shutdown period shall not exceed 4 hours.

Water main shut-down will be performed by City staff. Shut-downs affecting commercial establishments will be allowed during business closure hours only. Contractor shall coordinate this work with the business being impacted and shall only perform this work during non-business hours unless otherwise approved by the Engineer.

PRESSURE TESTING FIRE HYDRANT

Fire hydrant and assembly shall be pressure tested after installed or relocated at new location as shown on the plans. The pressure should be 310 to 380 kilopascals at 3785 liters per minute.

MEASUREMENT AND PAYMENT

Fire hydrant and relocate fire hydrant will be measured as units determined from actual count complete in place.

The contract unit price paid for fire hydrants shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing fire hydrants, complete in place, including sawcutting of existing pavement as required for the installation, trenching and backfill, construction of the concrete thrust block at the back of the hydrant, and at the back of the main line fitting, main line fittings, the 150 mm gate valve for the hydrant lateral, the valve box, and the run of 150 mm pipe as required from the water main to the fire hydrant, blue pavement marker, adjusting the fire hydrant to finish grade as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

Full compensation for replacement of paving (trench resurfacing), replacement of curb and gutter or sidewalk improvements to facilitate the construction of the fire hydrants shall be considered as included in the contract unit price paid per for items of works involved in fire hydrant and no additional compensation will be allowed therefor.

The contract unit price paid for relocate fire hydrant shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in relocating fire hydrant including furnish and installing blue pavement markers, pipe extensions, concrete anchor blocks, structure excavation and structure backfill, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

10-4.04 GATE VALVES

This item shall include the furnishing and installation of gate valves on the new water main, or on lateral lines for tie-in to existing water mains.

MATERIALS

Gate valves shall be installed as shown on the plans and shall conform to AWWA Standard C-509, resilient seated gate valve. When fully open, the valves shall have an unobstructed passageway equal to the diameter of the pipe in which they are placed.

All valves shall be iron body, with "O" ring seals, bronze mounted, non-rising stem type, nut operated, left turn to open. Valve discs shall be cast iron with elastomeric seals bonded to the wedge. The bonding process shall meet the requirements of ASTM D-429. Exterior of the body shall be coated with asphalt varnish with a minimum thickness of 30 mils, or an approved epoxy coating system. All internal components subject to corrosion shall be protected with appropriate EPA-approved coatings.

Valve Boxes shall be 255 mm diameter concrete boxes with cast iron cover embossed with "Water", and shall be Brooks 3-RT, Christy G-5 or approved equal. Extensions for the valve box shall be a solid piece of 200 mm diameter pipe or equivalent material which shall protrude at least 100 mm into the valve box.

CONSTRUCTION

All buried valves shall be provided with a valve box. If necessary, an extension mast for the nut shall be installed to provide a distance from the top of the valve box to the nut of less than 1020 mm.

All valves shall be tested in place so far as practicable under the conditions specified and any defects revealed in valves or connections under test shall be corrected. Where proper operation and utilization of equipment and facilities requires the installation of valves not shown or specified, the Contractor shall provide and install, upon approval of the Engineer, valves similar and comparable to valves specified for similar and comparable duty in other parts of the project. Additional valves shall be paid for as extra work.

Valve boxes shall be installed with a concrete collar extending at least 200 mm below the top of the box. The concrete collar shall also extend a minimum of 200 mm beyond the outside of the valve box. Valve boxes shall be brought to grade after completion of the paving.

In paved areas, the top 50 mm of the collar shall normally be finished with hot-mix asphalt concrete. Under special circumstances, for valve boxes located on City streets, the Contractor may construct the concrete collar up to the surface, provided he constructs the collar with concrete containing lamp black or other material to produce a colored surface consistent with that of the street, and provided that approval of the Engineer is obtained.

MEASUREMENT AND PAYMENT

Gate valves will be measured as units determined from actual count complete in place.

The contract unit price paid for gate valve shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing gate valves, complete in place, including furnishing and installing the valve box and cover for the gate valves and the work associated with raising the boxes to grade after completion of the paving or trench resurfacing operations, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

10-4.05 WATER MAIN

This work shall consist of furnishing and installing water main as shown on the plans, in conformance with appropriate standards of the American Water Works Association (AWWA), and these special provisions and as directed by the Engineer.

MATERIALS

Pipe for construction of water supply lines shall be Class 150 C-900 Polyvinyl Chloride (PVC) pipe conforming to the following specifications. In special cases, other acceptable materials may be approved by the Engineer.

Pipe shall conform to AWWA Standard C900. PVC Pipe shall be suitable for the purpose intended, shall be installed as per manufacturer's recommendations, AWWA Standard C603.

EXCAVATION AND BACKFILL

Structure excavation and structure backfill for water main shall conform to the provisions in Section 19-3, "Structure Excavation and Backfill," of the Standard Specifications and these special provisions.

All pipe, fittings, and valves shall be carefully lowered into the trench by means of a derrick or other suitable tools or equipment in such manner as to prevent damage to the pipe or fittings. Any damaged pipe or fittings shall be promptly removed from the site by the Contractor at his expense.

The pipe shall be laid in a trench excavated to the lines and grades designated by the Engineer. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe. When bell-end pipe is used, suitable excavation shall be made so the bell portion of the pipe will not bear on the bottom of the trench.

All pipes shall be thoroughly cleaned of dirt, rock and other debris that may be found in the interior of the pipe. If considered necessary by the Engineer, he may direct the Contractor to swab the pipe to clean it. At the end of each day's work, each end of the pipe shall be closed by means of a special bulkhead, plug, or by other means approved by the Engineer.

Trenches shall not be left open farther than 185 meter in advance of pipe laying operations, including excavation, construction, pipe laying, and backfilling at any one location, unless otherwise permitted by the Engineer. Unless otherwise provided, the width of the trench shall be equal to the outside diameter of the pipe plus a minimum of 0.3 meter on each side of the pipe, unless provisions for shoring equipment must be made. In such case, the Contractor shall submit to the Engineer his proposed methods of shoring. Such method shall not cause disruption of the pipe joint after assembly. Where the pipe is placed under an oiled road, the oil cake shall be excavated, removed and disposed of.

The completed trench shall be uniformly graded to a flat bottom conforming to the grade to which the pipe is to be laid. The pipe shall be laid upon sound soil cut true and even so the barrel of the pipe shall be in full bearing for its entire length. Any trench excavated below the approved grade shall be backfilled and thoroughly compacted with bedding material as specified in Standard Specification, Section 19-3.05, so the barrel of the pipe will be in full bearing for its entire length. The bedding material shall be moistened sufficiently to produce plus or minus 2 percent of optimum moisture and thoroughly compacted to a minimum of 90% relative compaction by aid of mechanical or hand tampers under and on each side of the pipe.

When bell holes are required, they shall be excavated at each location where pipes are to be joined. Bell holes shall be of sufficient and adequate size to permit ease in making the joint.

The Contractor shall be responsible for the location of subsurface obstructions in the field and shall notify the Engineer immediately if changes in pipe grade are required to avoid them.

All existing gas pipes, water pipes, conduits, sewers, drains, fire hydrants, and other structures which are not, in the opinion of the Engineer, required to be changed in location shall be carefully supported and protected from injury by the Contractor and in case of injury, they shall be restored by him, without additional compensation to a satisfactory condition as determined by the Engineer or affected utility company.

The Contractor shall provide, when necessary, without additional compensation, suitable temporary channels for any water that may flow along or across the site of the work.

If all excavated material cannot be stored on the roadway in such a manner as to maintain access to property alongside of the work, the surplus material shall be removed from the work and stored until needed for backfill at which time it shall be brought back. The cost of removing and returning material shall be at the Contractor's expense.

After the trench has been excavated and prepared, the pipe shall then be carefully lowered into place and adjusted accurately to the required line and grade. Any blocking used to support the pipe during laying shall be removed after sufficient backfill has been placed to hold the pipe on the required line and grade. Each pipe shall have a firm bearing for its full length in the trench, except at the bell holes and field joints.

Whenever necessary to deflect the pipe from a straight line either in vertical or horizontal plane to avoid obstruction, or where long radius curves are permitted, the degree of deflection at joints shall be approved by the Engineer.

Both the gasket seat in the socket and the gasket shall be wiped clean with a cloth. A thin film of lubricant shall be applied to the inside surface of the gasket that will aid in the assembly of the joint. The type of lubricant can be used shall be as recommended by the gasket manufacturer or compatible. Sufficient force shall be applied to the entering pipe in a manner recommended by the pipe manufacturer and approved by the Engineer in order to complete the assembly of the joint.

All backfilling shall be done as soon and as quickly as possible, and, except by special permission from the Engineer, shall be completed for the entire trench by the end of each working day. No excavation or trench shall be left open more than twenty-four (24) hours before the installation of the pipe and the backfilling of said excavation or trench.

Structural backfill material as specified in Standard Specification, Section 19-3.06, shall be placed in the trench simultaneously on both sides of the pipe for the full width of the trench to an elevation approximately 0.15 meter above the top of the pipe. The initial structural backfill material shall be moistened sufficiently to produce maximum compaction and thoroughly compacted as required by aid of mechanical or hand tampers in layers not exceeding 0.15 meter in thickness under and on each side of the pipe.

Additional remaining backfill shall consist of native material free from brush or any other perishable or objectionable matter that would prevent proper consolidation or that might cause subsequent settlement, and shall be slightly moistened and thoroughly compacted by the use of hydrahammer or other mechanical tamper satisfactory to the Engineer and public agency. All backfill shall be compacted to the relative compaction of 95%.

Compaction efforts utilizing hydrahammers or mechanical or hand tampers, shall be accomplished in layers not exceeding two feet in thickness. Ponding and jetting methods of compaction will not be permitted in the top thirty inches of trench.

It shall be the sole responsibility of the Contractor to select the method utilized for trench compaction, but such method shall be subject to the review of the Engineer to satisfy his opinion that such method will produce uniform and consistent results. The Engineer assumes no responsibility for the guarantee or adequacy of such method selected by the Contractor. All compaction percentages will be determined by Test Method No. California 216 in State Highway right-of-way, and by ASTM D-1557 methods for local streets. The Contractor shall give notice to the Engineer two working days in advance when he desires the compaction tests to be taken, and samples will be taken at points selected by the Engineer. The specified compaction shall be attained by the Contractor. In the event that the original compaction tests do not meet the minimum acceptable compaction as set forth in this paragraph, any subsequent tests as recommended by the Engineer will be paid for by the Contractor and will be deducted from his payment. No trench resurfacing will be permitted until the compaction tests are approved by the Engineer, with the exception of temporary surfacing.

Pipe may be laid in open trenches or in sections of open trenches connected by tunnels, as permitted by the Engineer.

PIPE LAYING

Pipe shall be protected from damage during installation. When the new facilities interfere with the existing flow of utilities, the Contractor shall provide satisfactory bypass facilities at his expense.

All joints shall be cleaned and then sealed with the type of materials specified by the local municipality, utility, or owner. In the absence of such requirements the pipe shall be jointed with materials recommended by the pipe manufacturer for the purpose intended, and approved by the Engineer.

ABANDON OR SALVAGE WATER APPURTENANCES

Whenever existing water meters, water main, fire hydrants, backflow valve are to be salvage or abandoned, the open ends of said pipes shall be securely closed by a tight fitting plug or wall of concrete not less than 150 mm thick, or by a tight brick wall 205 mm thick with cement mortar joints. Water appurtenances shall not be abandoned until their use is no longer required. The Contractor shall notify the Engineer in advance of any intended water appurtenances pipeline abandonment.

THRUST BLOCKS

Thrust blocks shall be sized and so placed as to take all thrusts created by maximum internal water pressure. Blocking shall be made of Class 3 concrete, and shall be placed between undisturbed ground and the fitting to be anchored. The area of bearing on the pipe and on the ground shall be that required by the Engineer. The blocking shall be placed so that the joints of the pipe and fittings shall be accessible for repair.

WATER METERS

Water meters for 100 mm services shall be "Neptune" of the type installed as shown on the plan. Water meters shall be centered under reading lid, not exceed 300 mm depth. Water meters for 25 mm and 50 mm water services shall be Neptune "Pro Read" as shown on the plan. Traffic lid is required if water meter is located in the traffic area.

WATER SERVICE LATERAL

Water service lateral shall be installed as shown on the plans. 25 mm polyethylene pipe should be iron pipe size. 50 mm polyethylene pipe should be copper pipe size. There shall be a letter "w" 75 mm high stamped on curb face over water service lateral.

WATER MAIN BLOWOFF ASSEMBLY

Water main blowoff assembly shall include gate valve and vault box and installed as shown on the plans. The vault box should be Christy G-8 traffic valve box or approved equal. The gate valve should be 50 mm Crane No. 410 or approved equal.

TRACER WIRES

Tracer wire shall be installed and shall be No. 12 solid copper or aluminum National Electrical Code Type TW insulation, and shall form a mechanically and electrically continuous line throughout the length of the pipe. Conductors shall be spliced and insulated in accordance with the code. The wires shall be placed so as not to be broken or stressed by the backfilling operations.

Tracer wire shall be connected to existing tracer wire on existing pipe or attached to the underside of the connection to existing pipe as directed by the Engineer.

CONNECTION TO EXISTING WATER MAIN

The Contractor shall make connections to existing water lines as approved by the Engineer. Connections shall be made at such times as designated by the Engineer and in such manner as to insure the least inconvenience to water users. No connection shall be made until the new work has passed the pressure and bacteria tests. The Contractor shall be responsible for safeguarding the existing system from all damage and possible contamination in the performance of his work. The Contractor shall notify the affected property owners and/or adult occupants of the proposed interruption of service at least 24 hours prior to the occurrence for residential customers and one week prior to the occurrence for industrial and commercial customers.

DISINFECTION

Disinfection shall be accomplished by the following or other procedure satisfactory to the Engineer. Calcium Hypochlorite disinfecting compound in powder or pellet form may be introduced into the pipe while laying. Sufficient amounts shall be placed so as to obtain approximately 50 parts per million of chlorine in all parts of the line when line is filled with water. Treated water shall be retained at least twenty-four (24) hours after which time it shall be tested for residual chlorine. Residual chlorine must be present or the pipe shall be rechlorinated. When disinfection has been completed and approved by the Engineer, the system shall be flushed and filled with clear water. After refilling the lines a bacteriological sample shall be taken by a qualified laboratory.

If the sample is found not to be of a safe bacteriological quality, the Contractor shall rechlorinate and retest the line until no bacteriological contamination is present.

TESTING OF WATER MAIN

The Contractor shall test the water main before and after backfilling. The system shall be tested as a single unit, or in sections as approved by the Engineer. The Contractor shall furnish necessary materials, test pumps, instruments and labor and notify the Engineer at least 48 hours in advance of testing. The Contractor shall take precautions to prevent joints from drawing while pipes and appurtenances are being tested. The Contractor shall repair damage to pipes and appurtenances or to other structures resulting from or caused by tests. Any repairs proposed by the Contractor to stop leaking shall be submitted to the Engineer for approval before the repair work is done.

During testing of water systems, valves shall be closed and pipeline filled with water. Provisions shall be made for release of air. The Contractor shall place the pipe under a pressure of 1035 Kilopascals for a period of not less than one hour. Systems shall show no loss in pressure or visible leaks. After testing, the Contractor shall repair all leaks and retest to determine that leaks have been stopped. Surplus water shall be disposed of after testing.

MEASUREMENT AND PAYMENT

The water main to be paid for by the meter will be determined from the slope length designated by the Engineer. Water main placed in excess of the lengths designated will not be paid for.

The contract price paid per meter for water main shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in laying the water mains, complete in place, including: excavation, trench patch, installing valve boxes, water lateral services, water meters, blowoff assembly, back flow preventer assembly, salvage blowoff valve, salvage backflow valve, salvage water meter, salvage fire hydrant, abandon water mains, disposal of surplus excavated material, disposal of surplus pipe materials, connections to existing water line, pipe wrapping, pipe fittings, assemblies, frames and covers, sampling and testing, disinfecting, flushing, operational testing, and all other appurtenances, as shown on the plans, as specified these special provisions, and as directed by the Engineer.

10-4.06 SANITARY SEWER PIPE AND APPURTENANCES

GENERAL

This work shall consist of laying sewer pipe and constructing sewer structures as shown on the plans, in accordance with the Standard Specifications, these special provisions and as directed by the Engineer. The sewer is owned and operated by the City of Ceres. The Contractor shall notify the owner 10 working days before work is begun on any existing sewer facility.

Sanitary sewer pipe shall be vitrified clay pipe, bell and spigot, and conform to the latest edition of ASTM designation C-700. Joints shall be flexible compression joints conforming to the latest edition of ASTM Designation C425.

Connections to sanitary sewers shall be made at wyes or by sawing a hole and installing a collar wye saddle. No connections shall be permitted in lines greater than 250 mm in diameter, except at manholes.

Minimum cover over the top of vitrified clay sewer pipe shall be 915 mm from finished grade of the street. If this minimum cover cannot be obtained, cast iron pipe shall be installed. In no case shall the depth from finished grade be less than 610 mm in the street. The depth of the collection pipe shall be sufficient that the required minimum slope can be maintained for the residential and commercial connection.

Sewer lines shall be air pressure tested. The Contractor shall furnish all materials, equipment and labor for making an air test. Air test equipment shall be approved by the Engineer unless otherwise provided on the plans or in the Standards.

The Contractor shall conduct an air test of the sewer main line after densification of the backfill. Each section of sewer shall be tested between successive manholes by plugging and bracing all openings in the main sewer line and the upper ends of all residential and commercial connection sewers. Prior to any air pressure testing, all pipe plugs shall be checked with a soap solution to detect any air leakage. If any leaks are found, the air pressure shall be released, the leaks eliminated, and the test procedure started over again.

The final leakage test of the sewer main line and residential and commercial laterals, shall be conducted in the presence of the Engineer in the following manner: Air shall be introduced into the pipeline 20.68 kPa until gage pressure has been reached, at which time the flow of air shall be reduced and the internal air pressure shall be maintained between 17.24 and 24.13 kPa (gage) for at least two minutes to allow the air temperature to come to equilibrium with the temperature of the pipe walls. Pressure in the pipeline shall be constantly monitored by a gage and hose arrangement separate from hose used to introduce air into the line. Pressure in the pipeline shall not be allowed to exceed 34.47 kPa (gage).

After the temperature has stabilized and no air leaks at the plugs have been found, the air pressure shall be permitted to drop and, when the internal pressure has reached 17.24 kPa (gage), the time lapse required for the air pressure to drop to 10.34 kPa (gage) shall be measured.

If the time lapse (in seconds) required for the air pressure to decrease from 17.24 to 10.34 kPa (gage) exceeds that shown in the following table, the pipe shall be presumed to be within acceptance limits for leakage.

If the time lapse is less than that shown in the table, the Contractor shall make the necessary corrections to reduce the leakage to acceptable limits.

T = Time in seconds for pressure to drop from 17.24 to 10.34 kPa (gage).
D = Diameter (inside) of pipe in mm.

The Contractor shall have the sewer pipe flushed. A television inspection performed by the City of Ceres Sewer Division shall be made and any deficiencies corrected prior to pressure testing the sewer piping. The actual charges shall be based on the total time spent and equipment used by the Sewer Division flushing and performing the television inspection.

LOW PRESSURE AIR TEST FOR SEWERS
Time (T) in Seconds

		Residential and Commercial Connection Length				
Diameter (mm)	Length (m)	0 m	31 m	61 m	92 m	122 m
	15	30	40	60	80	90
	31	50	60	80	100	120
150	46	70	80	100	120	140
	61	90	100	120	140	160
	92	130	140	160	180	200
	122	170	190	200	220	240
	0	0	20	40	50	70
	15	40	50	70	90	80
	31	70	90	100	100	90
200	46	110	120	110	100	100
	61	140	120	110	110	100
	92	140	130	120	110	110
	122	140	130	120	120	110
	15	50	70	90	100	90
	31	110	130	120	110	110
250	61	170	150	140	130	120
	92	170	160	150	140	130
	122	170	160	150	150	140
	15	80	100	110	110	110
	31	160	170	150	140	130
305	61	200	180	170	160	150
	92	200	190	180	170	160
	122	200	190	180	180	170
	15	120	140	160	140	130
	31	250	220	190	170	160
380	61	260	230	220	200	190
	92	260	240	230	220	210
	122	260	240	230	220	220

Trenches in existing streets shall be resurfaced with the type and thickness of base, surfacing or pavement as indicated on the plans or as required by the Engineer. In no case shall the resurfacing consist of less than 50 mm AC (Type B) over compacted native material.

Manholes where allowed, shall be adjusted to grade after the final layer of street paving is completed.

Precast concrete manhole sections, adjustment rings, and tapered sections shall conform to the requirements of ASTM C-478.

MATERIALS

In accordance with the provisions in Section 6-1.07, "Certifications of Compliance," of the Standard Specifications, a Certificate of Compliance shall be furnished to the Engineer for each type of pipe furnished.

SEWER FRAME AND COVER

Sewer manhole frame and cover shall conform to the provisions in "Miscellaneous Iron and Steel" of these special provisions.

REINFORCEMENT

Reinforcement shall conform to the provisions in "Reinforcement" of these special provisions.

CONCRETE

Concrete shall conform to the provisions in "Concrete Structures" of these special provisions.

EXCAVATION AND BACKFILL

Excavation and backfill shall conform to the provisions in Sections 19-1.02, "Preservation of Property," and 19-3, "Structure Excavation and Backfill," of the Standard Specifications and these special provisions.

The pipe shall be laid in a trench excavated to the lines and grades designated by the Engineer. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe barrel. When bell-end pipe is used, suitable excavation shall be made so the bell portion of the pipe will not bear on the bottom of the trench. All adjustment to line and grade shall be made by scraping away or filling in with sand, gravel, or granular material under the body of the pipe, and not by wedging or blocking.

The excavation shall be supported so that it will be safe and that the ground alongside the excavation will not slide or settle and all existing improvements, either on public or private property, will be fully protected from damage.

All supports required by the Section 5-1.02A, "Trench Excavation Safety Plans," of the Standard Specifications shall be removed after construction is completed, unless otherwise directed by the Engineer, and shall be withdrawn in a manner that will prevent the caving of the sides of the excavation. All openings caused by the removal of supports shall be filled with suitable material properly compacted.

Backfill of pipe trenches may be placed while the joint mortar is still plastic. Should the joint mortar become set before the backfill is placed, backfilling the pipe trenches shall not be commenced within 16 hours of jointing the pipe sections.

EXISTING MANHOLES AND SEWERS

Existing manholes shall be adjusted to grade abandoned, or removed and disposed of as shown on the plans and in accordance with the provisions in "Existing Highway Facilities" of these special provisions.

Existing sewers shall be abandoned or removed as shown on the plans and in accordance with the provisions in "Existing Highway Facilities" of these special provisions.

PIPE LAYING

Pipe shall be protected against impact shocks during handling and shall not be allowed to free fall.

The pipe shall be laid without break upgrade from structure to structure, with bell end upgrade for bell and spigot pipe, unless otherwise permitted by the Engineer.

All joints shall be cleaned and then sealed with the type of materials specified elsewhere in these special provisions. In the absence of such requirements the pipe shall be jointed with materials recommended by the pipe manufacturer for the purpose intended, and approved by the Engineer, in order to obtain a watertight joint against leakage and infiltration under all conditions of expansion, contraction, and settlement.

Liquid types of sealing materials shall be retained by molds or runners until congealed. Liquid materials shall be poured into the joint space in a continuous operation and agitated until the joint is completely filled.

Voids occurring in the outer and inner annular sealing material shall be filled with the same type of material and the inside of the joint finished smooth. Sealing materials shall be sufficiently protected from the air and sun to prevent deterioration.

Whenever the work ceases for any reason, the end of the pipe shall be securely closed with a tight fitting plug or cover.

Whenever existing pipes are to be cut or abandoned, the open ends of said pipes shall be securely closed by a tight fitting plug or wall of concrete not less than 150 mm thick, or by a tight brick wall 200 mm thick with cement mortar joints. All joints shall be carefully cleaned on the inside.

SEWER STRUCTURES

New manholes for sewers shall be constructed in accordance with the details shown on the plans, as specified in these special provisions and as directed by the Engineer.

1200 mm sewer manholes shall conform to the provisions in Section 70, "Miscellaneous Facilities," except for measurement and payment.

Concrete for sewer manhole shall be Class 3 unless otherwise shown on the plans. When the manhole is located in the pavement area, it shall not be constructed to final grade until the pavement has been completed.

The inside bottoms of existing manholes, where new connections are made, and of new manholes shall be shaped to provide channels conforming to the size and shape of the lower portion of the inlets and outlets of the manholes. The channels shall vary uniformly in size and shape from inlet to outlet.

No pipe shall project more than 50 mm into a manhole and in no case shall the bell of a pipe be built into the wall of a manhole or structure.

All concrete shall be cured for a period of not less than 10 days after being placed and shall be protected from damage.

MEASUREMENT AND PAYMENT

The lengths of the vitrified clay pipe to be paid for by the meter will be the slope length designated by the Engineer. Pipe placed in excess of the length designated will not be paid for, unless pipes are cut to fit a structure. When pipes are cut to fit a structure, the quantity to be paid for will be the length of pipe placed before cutting, measured in 610 mm increments.

1200 mm sewer manholes will be measured as units determined from actual count.

New sewer manhole frames and covers will be measured as units determined from actual count.

The contract price paid per meter for vitrified clay pipe shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing sewer pipe, complete in place, including furnishing and placing plastic liner materials, field joints, turnbacks and their installation, sewer lateral service and testing, joining of pipe to other pipe or structure, capping open ends of pipe, testing the sewer line, furnishing and disposing of water used for testing, all structure excavation, structure backfill, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract unit price paid for 1200 mm sewer manhole shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing sewer manholes, complete in place, including bar reinforcement, shaping bottoms of existing and new manholes, utility support and protective work operations required to accommodate or safeguard public traffic, and all other incidental work and material required to construct the sewer system, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract unit price for sewer manhole frame and cover shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing sewer manhole frame and cover, complete in place, including bar reinforcement, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
2	070018	TIME-RELATED OVERHEAD	WDAY	620		
3	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	250		
4	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
5	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
6	074028	TEMPORARY FIBER ROLL	M	2100		
7	074029	TEMPORARY SILT FENCE	M	1400		
8	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	3		
9	074037	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	2		
10	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	29		
11 (S)	074040	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	M2	22 000		
12	074041	STREET SWEEPING	LS	LUMP SUM	LUMP SUM	
13	074042	TEMPORARY CONCRETE WASHOUT (PORTABLE)	LS	LUMP SUM	LUMP SUM	
14 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
15 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
16 (S)	120116	TYPE II BARRICADE	EA	7		
17 (S)	120120	TYPE III BARRICADE	EA	14		
18 (S)	120165	CHANNELIZER (SURFACE MOUNTED)	EA	190		
19 (S)	128650	PORTABLE CHANGEABLE MESSAGE SIGN	LS	LUMP SUM	LUMP SUM	
20	129000	TEMPORARY RAILING (TYPE K)	M	3020		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	129100	TEMPORARY CRASH CUSHION MODULE	EA	200		
22	129150	TEMPORARY TRAFFIC SCREEN	M	1170		
23	150608	REMOVE CHAIN LINK FENCE	M	710		
24 (S)	150662	REMOVE METAL BEAM GUARD RAILING	M	160		
25 (S)	150666	REMOVE METAL BEAM BARRIER	M	90		
26 (S)	150704	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE	M	850		
27 (S)	150711	REMOVE PAINTED TRAFFIC STRIPE	M	3250		
28 (S)	150713	REMOVE PAVEMENT MARKING	M2	78		
29 (S)	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	M	1800		
30 (S)	150722	REMOVE PAVEMENT MARKER	EA	250		
31	150742	REMOVE ROADSIDE SIGN	EA	4		
32 (S)	150760	REMOVE SIGN STRUCTURE	EA	1		
33	152390	RELOCATE ROADSIDE SIGN	EA	5		
34	152438	ADJUST FRAME AND COVER TO GRADE	EA	15		
35 (S)	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	M2	6420		
36	157550	BRIDGE REMOVAL	LS	LUMP SUM	LUMP SUM	
37	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
38	190101	ROADWAY EXCAVATION	M3	19 000		
39	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
40 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	M3	1440		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	M3	1560		
42 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	3000		
43 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	M3	3690		
44 (F)	193031	PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	M3	340		
45	198001	IMPORTED BORROW	M3	42 500		
46 (S)	203011	EROSION CONTROL (TYPE C)	M2	33 200		
47 (S)	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	2		
48 (S)	208733	300 MM CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	M	66		
49	260201	CLASS 2 AGGREGATE BASE	M3	7160		
50	390104	ASPHALT CONCRETE	TONN	17 300		
51	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	65		
52	394040	PLACE ASPHALT CONCRETE DIKE (TYPE A)	M	317		
53	394044	PLACE ASPHALT CONCRETE DIKE (TYPE C)	M	10		
54	394048	PLACE ASPHALT CONCRETE DIKE (TYPE E)	M	660		
55	394049	PLACE ASPHALT CONCRETE DIKE (TYPE F)	M	28		
56	397001	ASPHALTIC EMULSION (PAINT BINDER)	TONN	14		
57	490511	FURNISH STEEL PILING (HP 250 X 85)	M	3843		
58 (S)	490512	DRIVE STEEL PILE (HP 250 X 85)	EA	210		
59	490566	FURNISH STEEL PILING (HP 360 X 132)	M	1473		
60 (S)	490567	DRIVE STEEL PILE (HP 360 X 132)	EA	95		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81	560241	FURNISH SINGLE SHEET ALUMINUM SIGN (1.6 MM-FRAMED)	M2	20		
82	560242	FURNISH SINGLE SHEET ALUMINUM SIGN (2.0 MM-FRAMED)	M2	7		
83 (S)	561015	1524 MM CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	M	15		
84	566011	ROADSIDE SIGN - ONE POST	EA	40		
85	566012	ROADSIDE SIGN - TWO POST	EA	9		
86	620904	300 MM ALTERNATIVE PIPE CULVERT	M	6		
87	620909	450 MM ALTERNATIVE PIPE CULVERT	M	25		
88	620913	600 MM ALTERNATIVE PIPE CULVERT	M	31		
89	650069	450 MM REINFORCED CONCRETE PIPE	M	110		
90	650075	600 MM REINFORCED CONCRETE PIPE	M	500		
91	650077	750 MM REINFORCED CONCRETE PIPE	M	6		
92	650079	900 MM REINFORCED CONCRETE PIPE	M	640		
93	012323	600 MM PERFORATED PLASTIC PIPE UNDERDRAIN	M	550		
94	BLANK					
95	705224	600 MM CONCRETE FLARED END SECTION	EA	4		
96	012324	OUTFALL STRUCTURE (TYPE M)	EA	1		
97	709528	750 MM STANDPIPE	EA	1		
98	719305	MANHOLE (TYPE A)	EA	10		
99	012325	PRESSURE MANHOLE (TYPE C)	EA	10		
100	721011	ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)	M3	45		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	729010	ROCK SLOPE PROTECTION FABRIC	M2	120		
102	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	M3	950		
103 (F)	731517	MINOR CONCRETE (GUTTER)	M	15		
104	731530	MINOR CONCRETE (TEXTURED PAVING)	M2	750		
105	740500	DRAINAGE PUMPING EQUIPMENT	LS	LUMP SUM	LUMP SUM	
106	041095	LIFT STATION ELECTRICAL EQUIPMENT	LS	LUMP SUM	LUMP SUM	
107 (S-F)	750001	MISCELLANEOUS IRON AND STEEL	KG	97		
108 (S)	750010	MANHOLE FRAME AND COVER	EA	10		
109 (S)	750013	MANHOLE FRAME AND COVER (PRESSURE)	EA	10		
110 (S)	012326	INLET FRAME AND GRATE (TYPE 600-12X)	EA	29		
111	BLANK					
112 (S)	800391	CHAIN LINK FENCE (TYPE CL-1.8)	M	730		
113 (S)	802590	1.8 M CHAIN LINK GATE (TYPE CL-1.8)	EA	4		
114	820107	DELINEATOR (CLASS 1)	EA	87		
115	820131	OBJECT MARKER (TYPE K)	EA	3		
116 (S)	832002	METAL BEAM GUARD RAILING (STEEL POST)	M	23		
117 (S-F)	833032	CHAIN LINK RAILING (TYPE 7)	M	317		
118 (F)	041096	CHAIN LINK RAILING (TYPE 7 MODIFIED) (BLACK VINYL COATED)	M	243		
119 (S)	833080	CONCRETE BARRIER (TYPE K)	M	450		
120 (F)	833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	M	243		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141 (S)	860303	SIGNAL AND LIGHTING (CITY STREET LOCATION 3)	LS	LUMP SUM	LUMP SUM	
142 (S)	012328	MODIFY SIGNAL AND LIGHTING (CITY STREET LOCATION 4)	LS	LUMP SUM	LUMP SUM	
143 (S)	860401	LIGHTING	LS	LUMP SUM	LUMP SUM	
144 (S)	860460	LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
145 (S)	012329	ELECTRIC SERVICE (LIFT STATION)	LS	LUMP SUM	LUMP SUM	
146 (S)	860990	CLOSED CIRCUIT TELEVISION SYSTEM	LS	LUMP SUM	LUMP SUM	
147 (S)	012330	MODIFY FIBER OPTIC SYSTEM (CITY)	LS	LUMP SUM	LUMP SUM	
148	BLANK					
149	150224	ABANDON MANHOLE	EA	2		
150	014226	ABANDON SEWER MANHOLE	EA	3		
151	150227	ABANDON PIPELINE	M	750		
152 (S)	150229	ABANDON WATER WELL	EA	1		
153	014227	ABANDON SEWER PIPELINE	M	260		
154	014228	RELOCATE FIRE HYDRANT	EA	2		
155	193114	SAND BACKFILL	M3	440		
156	703543	300 MM WELDED STEEL PIPE (3.40 MM THICK)	M	9		
157	014229	200 MM WATER MAIN	M	220		
158	014230	250 MM WATER MAIN	M	920		
159	014231	FIRE HYDRANT	EA	11		
160	705952	200 MM GATE VALVE	EA	4		

ENGINEER'S ESTIMATE
10-2A7704

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	705953	250 MM GATE VALVE	EA	4		
162 (S)	014232	250 MM VITRIFIED CLAY PIPE	M	290		
163 (S)	719190	SEWER MANHOLE FRAME AND COVER	EA	7		
164 (S)	014233	1200 MM SEWER MANHOLE	EA	7		
165	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: _____